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FIG. 1

1 CTATGGCTCTTAGCCAAAACCAAGCCAAGTTTTCCAAAGGATTCGTCGTGATGATTTGG
-32 M A L S Q N Q A K F S K G F V V M I W

60 GTACTATTCAATTGCTTGTGCTATAACTTCAACTGAAGCTAGTCTAACCAAATGCCAACAG
5 -13 V L F I A C A I T S T E A S L T K C Q Q
-1 +1

120 CTCCAGGCCTCGGCTAACAGTGGTCTGATAGGTACTTATGTACCACAATGCAAAGAAACG
8 L Q A S A N S G L I G T Y V P Q C K E T

180 GGAGAGTTCGAAGAAAAACAATGCTGGGGATCGACTGGTTACTGTTGGTGTGTGGATGAA
10 28 G E F E E K Q C W G S T G Y C W C V D E

240 GATGGAAAAGAGATTCTAGGAACCAAGATCCGTGGATCTCCGGATTGCAGCCGCAGAAAA
48 D G K E I L G T K I R G S P D C S R R K

300 GCCGCGTTAACACTTTGCCAGATGATGCAAGCCATCATTGTTAATGTCCCTGGTTGGTGT
68 A A L T L C Q M M Q A I I V N V P G W C

15 360 GGCCCTCCATCGTGTAAGCTGACGGCAGTTTTGACGAGGTTCAAGTCTGCGCAAGTAAT
88 G P P S C K A D G S F D E V Q C C A S N

420 GGAGAATGCTACTGTGTGGATAAGAAAGGAAAAGAACTTGAAGGCACAAGACAACAGGGA
108 G E C Y C V D K K G K E L E G T R Q Q G

480 AGGCCAACCTGCGAAAGACACCTAAGCGAATGCGAGGAAGCTCGAATCAAGGCGCATTCA
20 128 R P T C E R H L S E C E E A R I K A H S

540 AACAGTCTTCGTGTTGAGATGTTTCGTGCCAGAGTGTTTAGAAGATGGATCATATAACCCA
148 N S L R V E M F V P E C L E D G S Y N P

600 GTACAGTGCTGGCCTAGCACAGGATACTGTTGGTGGTTCGATGAAGGAGGGGTAAAGGTA
168 V Q C W P S T G Y C W C V D E G G V K V
25

660 CCAGGTTCCGATGTCAGATTTAAACGCCCCACATGCTAAGAAAAACACAGTGAACAAAGT
198 P G S D V R F K R P T C ---
199

720 GGCTAGTTTCCAGATCGAAAATAACTACAAAGGATTAATAAAATGTAAAATAATTTCTC
30 780 AATTCGGCTGTGATATATTTTTTCCAAGATAATTTAATCTGCATGTAGTTAACAGAAAAC
840 AATCTCAACTAGAAATAAAGACTACGGTAATAATGACAAAAAAAAAAAA

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FIG. 2

<u>thyroglobulin domains with demonstrated CPI activity</u>	
human invariant chain	LTKCQ--EEVSHIPAVHPGSRPKC--DENGNYLPQCYGSIG----YCWCVFPNGTEVPNTSR--GHHN--CSES
rat invariant chain (192-258)	KVLTKCQ--EEVSHIPDVHPGAFRPKV--DENGNYMPLQCHGSTG----YCWCVFPNGTEVPHTKSR--GRHN--CSEP
chum salmon egg inh.	HVPIDGIFHLKTPCE--LARDAATHGPIGGFIPTC--DYNGQYTPEQCWGSTG----YWCNVNSSGQKLPGTDTPPGSASNC
equistatin cDNA DOMAIN I	SLTKCQ--QLQASANSGLIGTYVPQC--KETGEFEEKQCWGSTG----YWCVDEDEGKEILGTKIR--GSPD--CSRRK
equistatin purified domain I	SLSKCQ--QLQASANSGLIGAYVPOC--KETGEFEEKQCWGSTG----YWCVDEDEGKEILGTKIR--GSPD--CSRRK
(protein sequence variants)	T V
<u>thyroglobulin domains with demonstrated aspartic protease inhibitor activity (either domain II or III)</u>	
equistatin cDNA DOMAIN II	AALTLCQ--MMQAIIVNVPGWCGPPSC--KADGSFDEVQCCASNG----ECYCVDDKKGKELEGTRQQ--GRP--TCERHL
equistatin purified domain II	AALTLCQ--MMQAIIVNVPGWCGPPSC--KADGSFDEVQCCASNG----ECYCVDDKKGKELEGTRQK--GRP--SCERHL
(protein sequence variants)	T
equistatin cDNA DOMAIN III	SECEEARIKAHSNSLRVEMFVEPC--LEDGSYNPVQCWPSTG----YWCVDEGGVKVPGSDVRFKRP--TC
equistatin purified domain III	SPCEEARLQAHSNSLRVGMFVPQC--LEDGSYNPVQCWPSTG----YWCVDEGGVKVPGSDVRFKRP--TC
(protein sequence variants)	E IK L D
<u>thyroglobulin domains with unknown protease inhibitor activity</u>	
mouse nidogen (824-892)	EHILGAAGGADAQRPTLQGMFVPQC--DEYGHYVPTQCHHSTG----YWCVDRDGRELEGSRTPPGMRPPCLST
human epithelial glycoprot (75-146)	GSKLGRRAKPEGALQNNDGLYDPDC--DESLFKAKQCNG--TS----MCWCVNTAGVRRTDKDEIT----CSERVRTY
bull frog saxiphilin (178-226)	KCLKERQVALGGDEKVLGRFVPQC--DEKGNVEPQQFHGSTG----YSWCVNAIGEEIAGTKTPPGKIPAC

(cont.) Fig.2

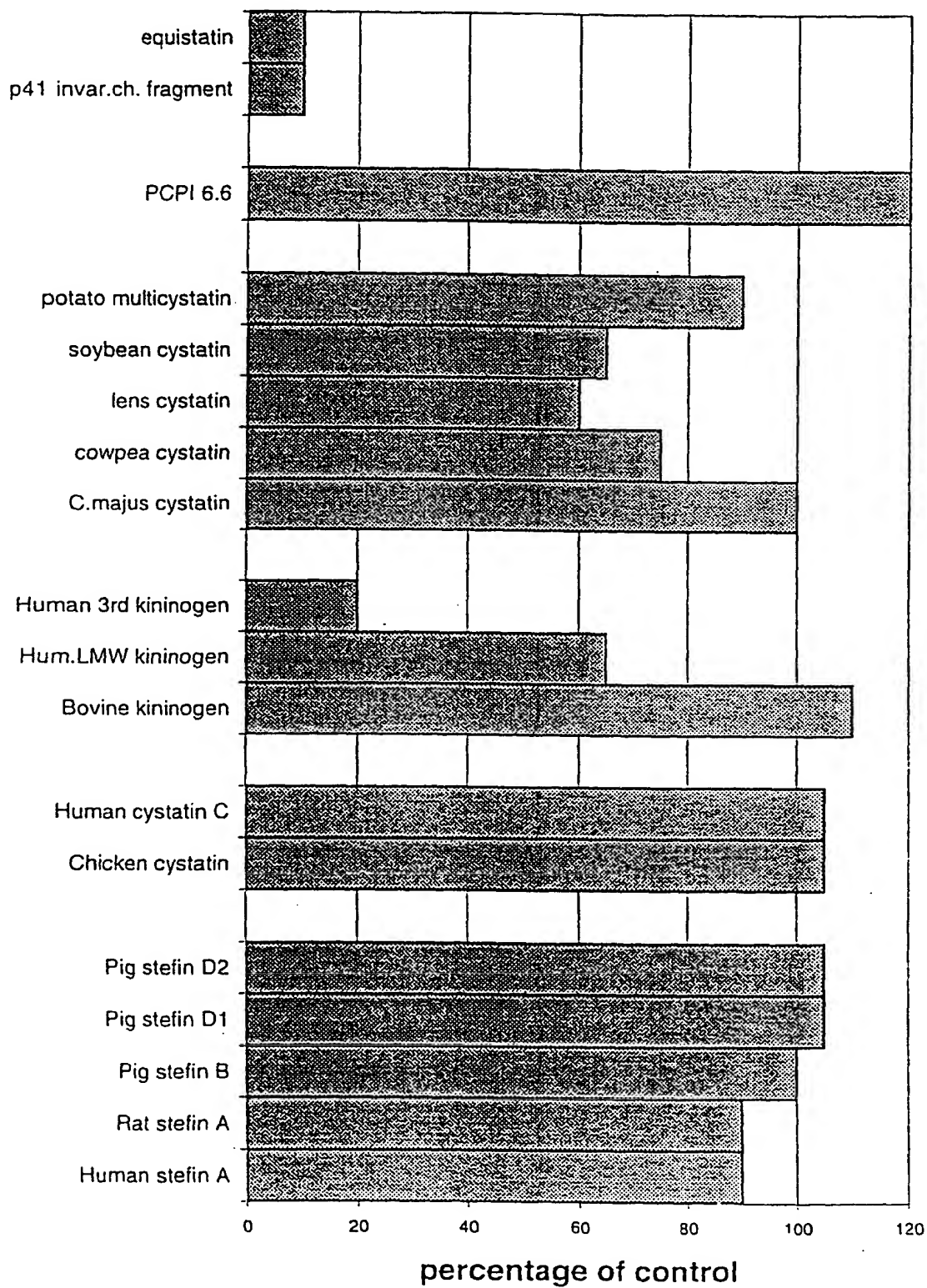
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Thyroglobulin 1.1 (29-73)	YVPQC-AEDGSFQTVQCQNDGR-----SCWCVGANGSEVLGSRQP-GRPVAC
Thyroglobulin 1.2 (97-141)	YLPQC-QDSGDYAPVQCDVQHV-----QCWCVDAEGMEVYGTQRL-GRPKRC
Thyroglobulin 1.5 (597-639)	FVPSC-TTEGSYEDVQCF-S-G-----ECWCVNSWGKELPGSRVRDQGP-RC
Thyroglobulin 1.6 (664-707)	FVPAC-TSEGHFLPVQCFN--S-----ECYCVDAEGQAIPTGTRSAIGKPKKC
Bovine thyroglobulin (1143-1215)	QCPSLCEVLQSGVPSRRTSPGYSPACRAEDGGFSPVQCDPAQG-----SCWCVLGSGEVPGTRVA-GSQPACESP
Mouse entactin (844-923)	KTRCQLEREHILGAAGGADAQRPTLQGMFVPQC-DEYGHYVPTQCHHSTG-----YCWCVDRDGRLEGSRTPPGMRPPCLSTVAP
Human IGF-binding protein-3	YGPCRREMEDTLNHLKFLNVLSPRGVHIPNC-DKKGFYKKKQCRPSKGRKRGCWCVDKYGQPLPGYTTKGKEDVHCYSMQSK
Human testican (305-381)	QKPGGLPCQNMENNRICKLSKGKSLLGAFIPRC-NEEGYYKATQCHGSTG-----QCWCVDKYGNELAGSRKQ-GAV-SCEEEQET
consensus	C-----//-----P-C-----G-----QC-----CWCV---G-----//-----C

Figure 3



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Figure 4a

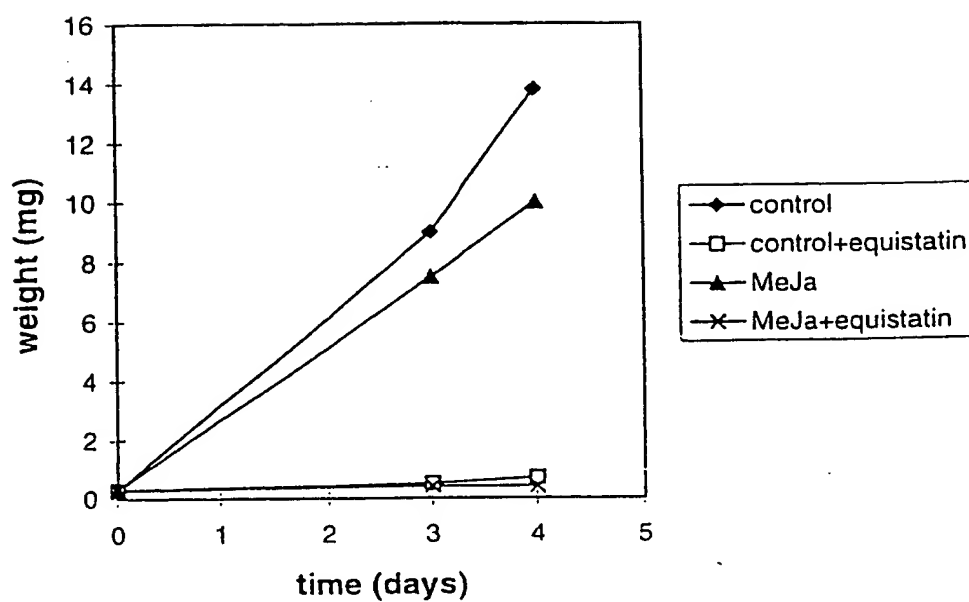
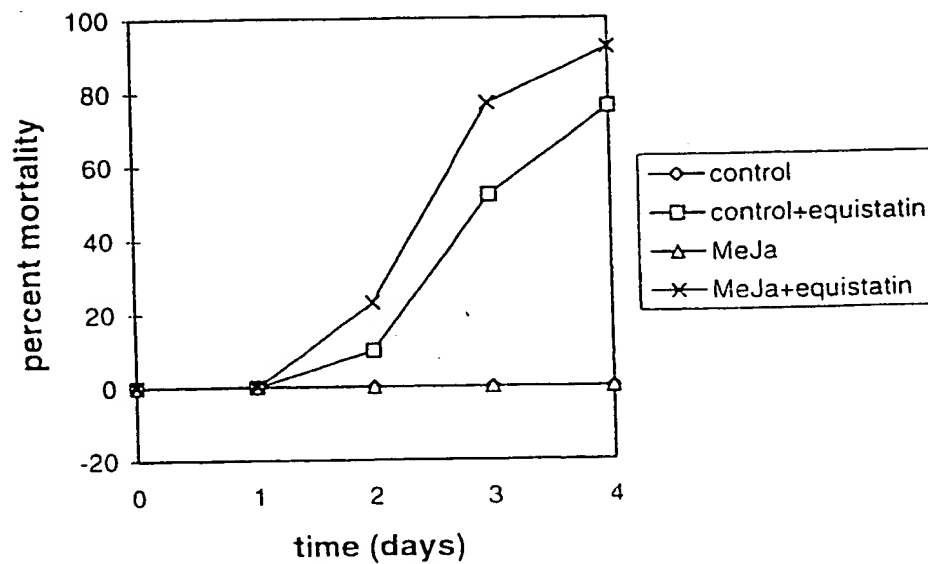
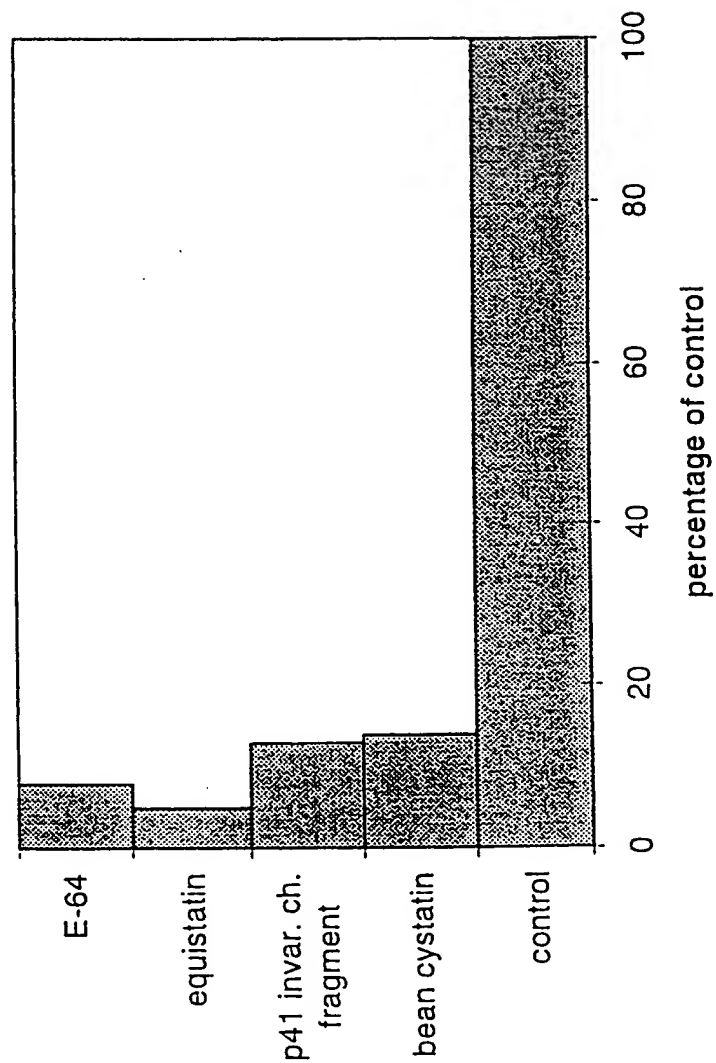


Figure 4b



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Figure 5



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Fecundity of thrips adults on diet with equistatin (day 2)

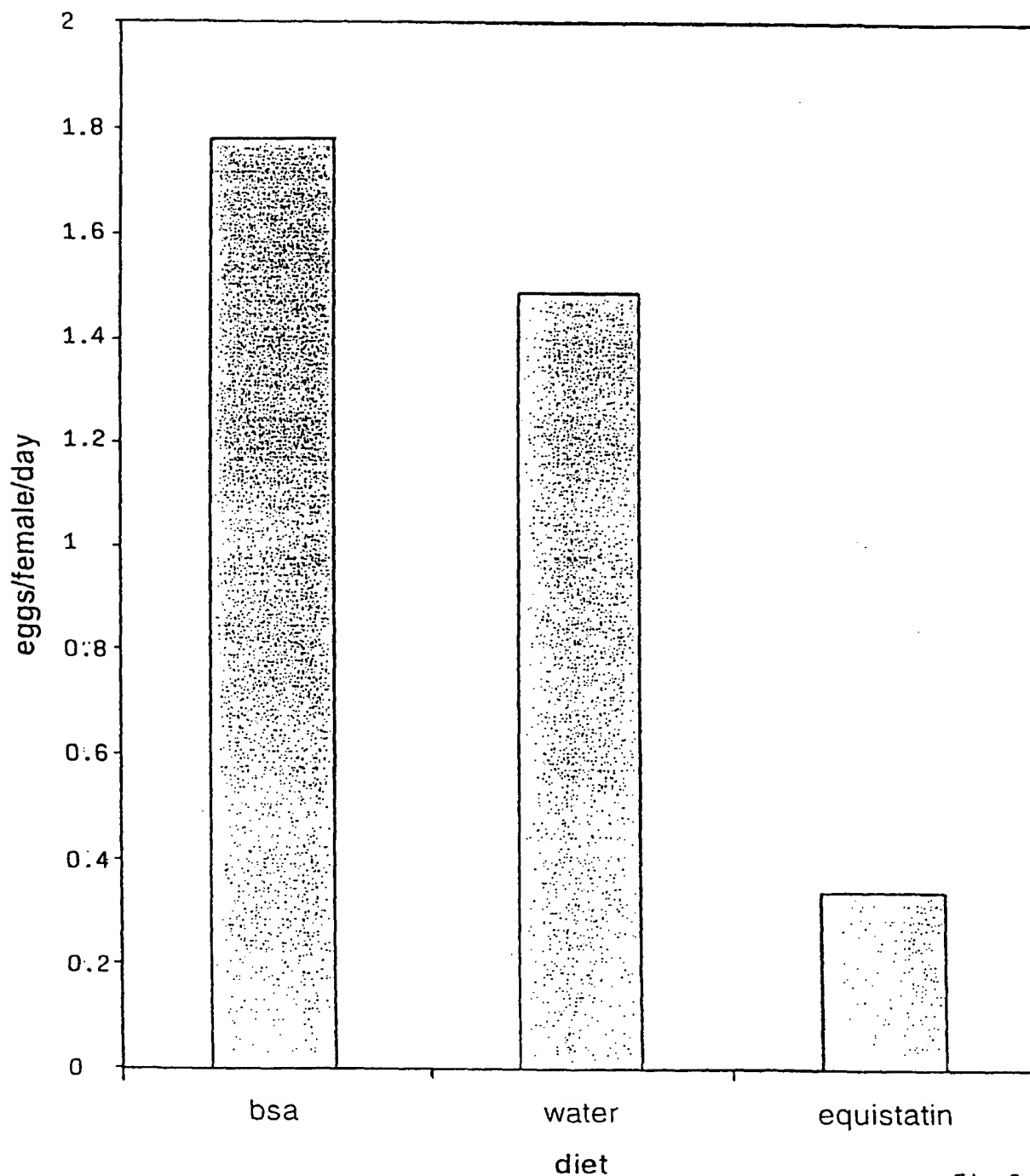
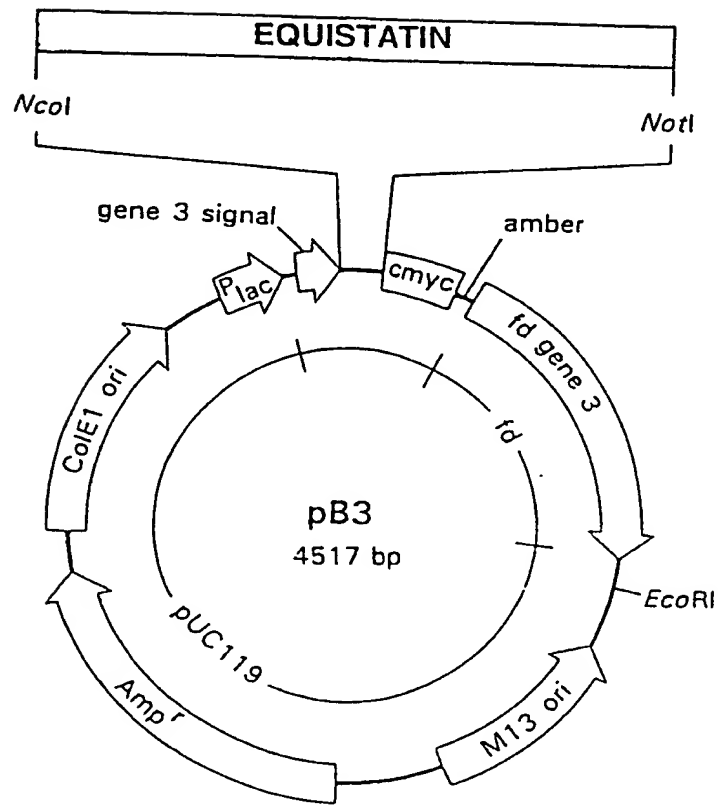


Fig.5

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FIG. 7



002020" 002020"



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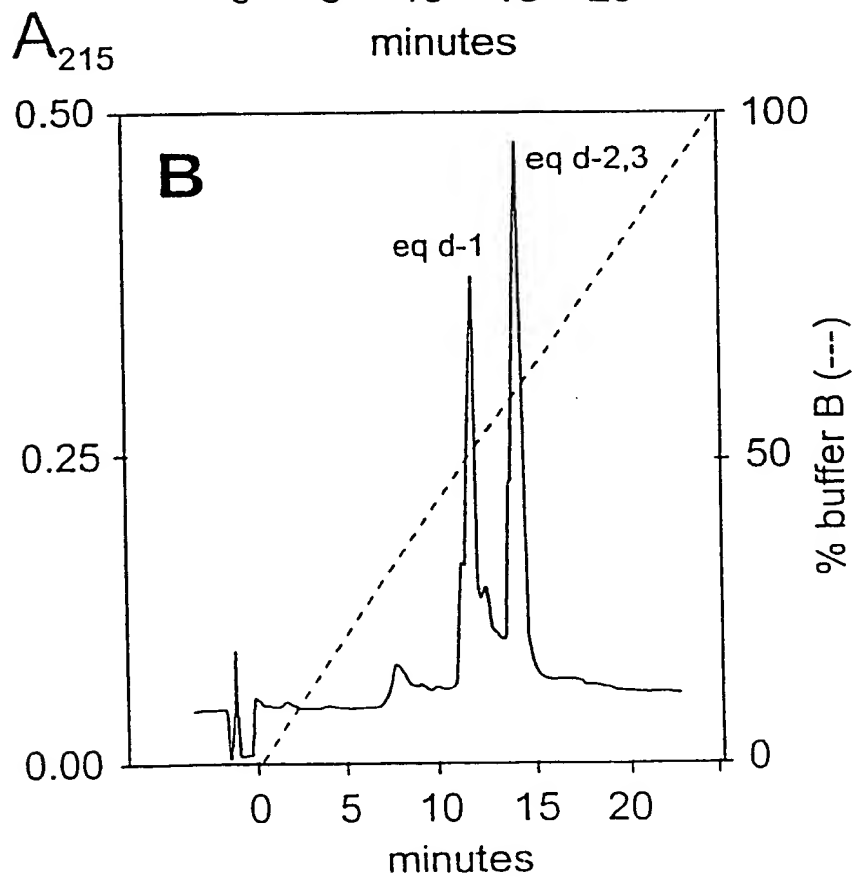
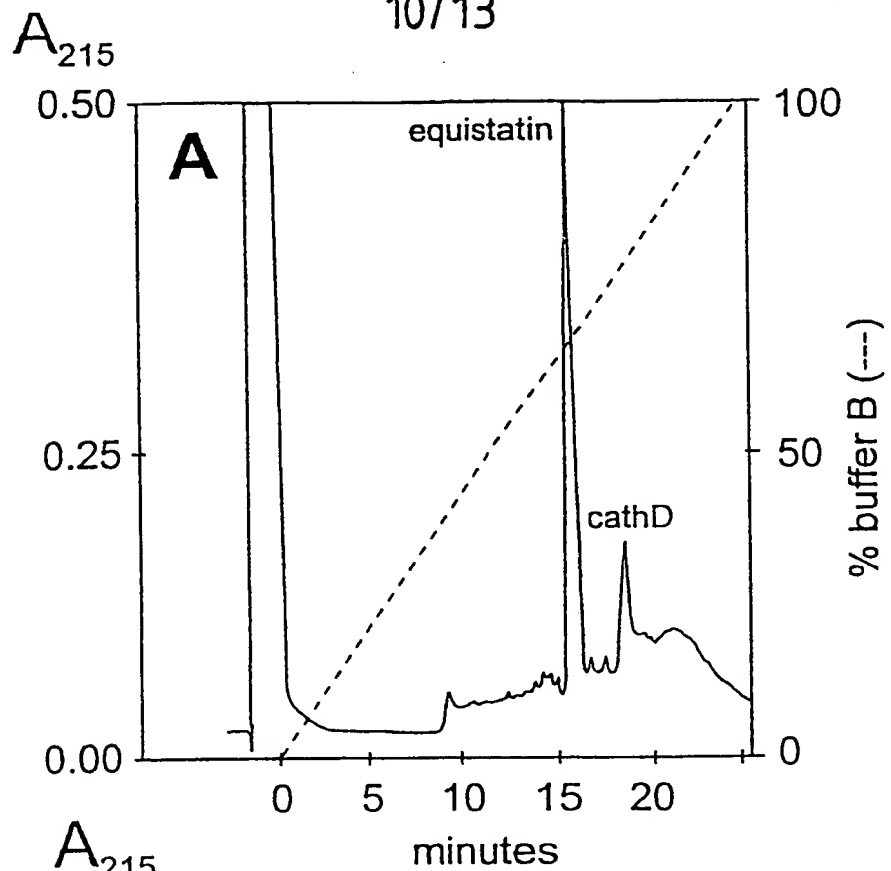


Fig. 9

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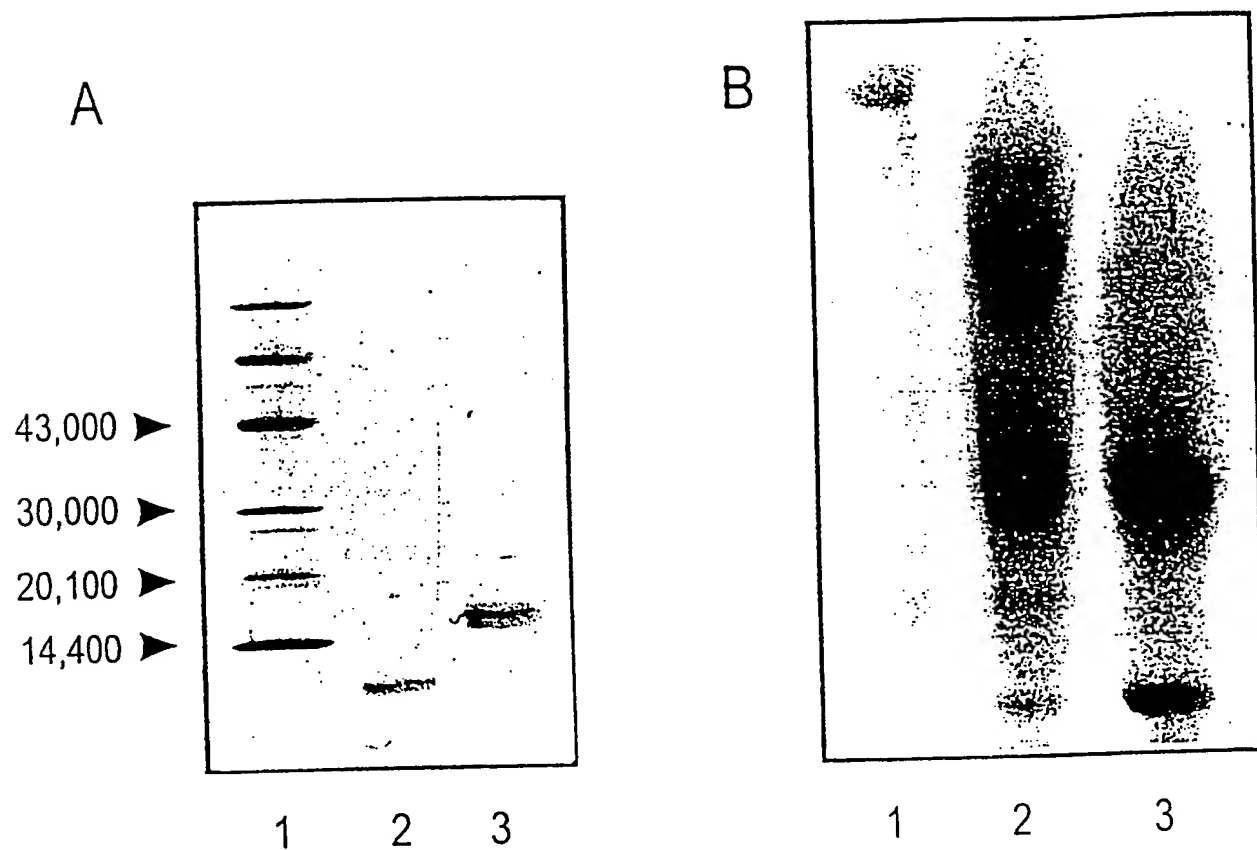


Fig.10

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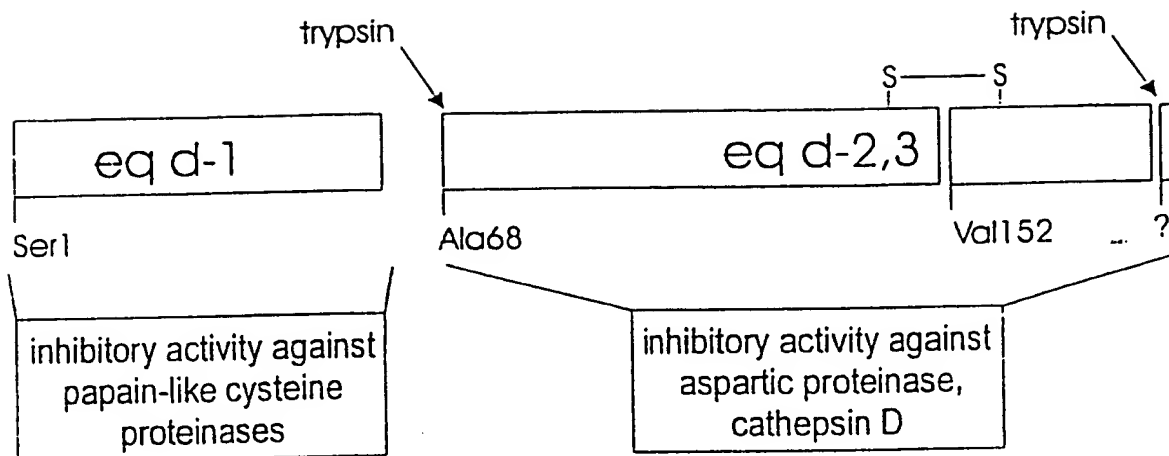


Fig.11

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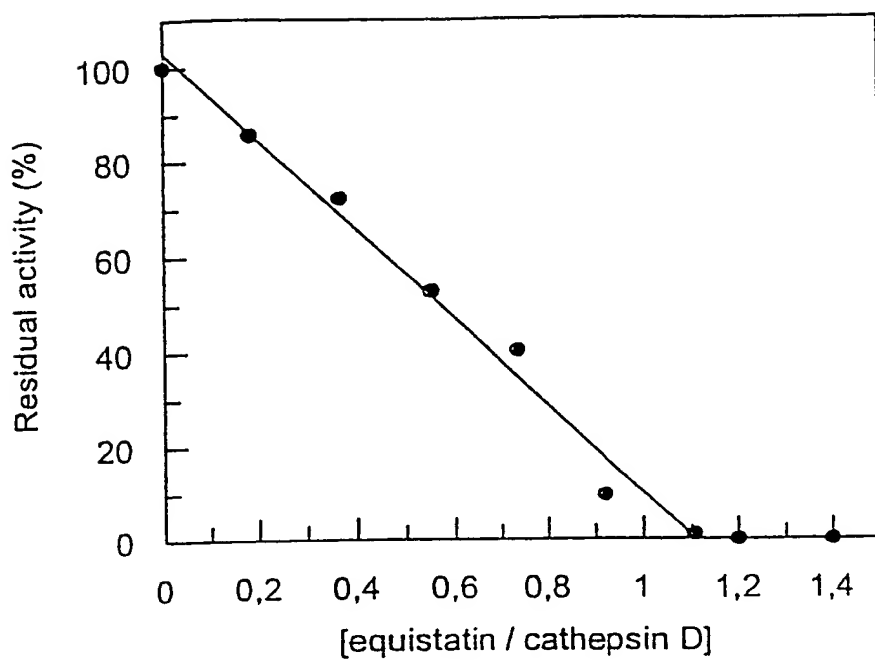


Fig.12